

REMARKS

Claims 1-7, 9, 11, and 12 are pending in the Office Action. Claim 1 has been amended. Claims 8-15 have been canceled. Claims 16-24 have been added. No new matter has been added. The rejections of the claims are respectfully traversed in light of the amendments and following remarks, and reconsideration is requested.

Prior to addressing the Examiner's objections and rejections, Applicant highlights some advantages of the present invention. The present invention is directed to preparing a core wire which has a relatively small wire diameter and coiling the core wire to achieve the smallest possible coil radius for the given wire diameter of the core wire. Thereafter, a layer which increases the electric conductivity and/or mechanical property of the coil is formed on the core wire. The coil wire, which is a combination of the core wire and layer, is thereby provided with a relatively large wire diameter. In particular, the wire diameter is now so large that a coil wire is formed with a coil radius which is not achievable without forming the coil wire in two stages, first by coiling the core wire and then by increasing the wire diameter by applying a layer over the surface of the core wire.

Objection to Drawings

The drawings are objected to under 37 C.F.R. 1.83(a). The Examiner writes in part:

The drawings of species B of figure 9 must show every feature of the invention specified in the claims. Therefore, the "one highly electrically conductive layer formed over said core wire" must be shown or the feature(s) canceled from the claim(s).

Applicant submits that FIG. 9 includes a reference to coil contact member 1 including portions 1a, 1b, and 1c. FIGS. 2 and 4-6 show element 1 in greater detail and explicitly include an "electrically conductive layer formed over said core wire." The Specification recites that "in Figure 2, the coil wire 5 consists of a core wire 4 and there plated layers 5a, 5b and 5c formed over the surface of the core wire 4" (Specification, page 8, lines 1-2) and that "Figure 4 shows the case where three plated layers 5a, 5b and 5c are formed after the core wire 4 has been coiled to a prescribed conical shape" (Specification, page 10, lines 19-21). The Specification further recites that "Figure 9 shows a second embodiment of the present invention in which the parts corresponding to those of the previous embodiment are denoted with like numerals." (Specification, page 13, lines 24-25).

Accordingly, Applicant submits that no drawing correction is required and respectfully requests withdrawal of the objections to the drawings.

Claim Objections

Claim 9 is objected to because of informalities. Claim 9 has been canceled thus obviating the objection.

Rejection Under 35 U.S.C. § 112

Claims 1-7 are rejected under 35 U.S.C. § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to: reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention; and to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. In particular the Examiner writes in part that "electrically conductive layer form[ed] over said core wire" is not shown in FIG. 9.

As remarked above with respect to the Objection to Drawings, Applicant submits that an "electrically conductive layer formed over said core wire" is shown in FIGS. 9 and related FIGS. 2 and 4-6. Accordingly, Applicant respectfully requests withdrawal of the rejections under 35 U.S.C. § 112, first paragraph.

Claims 1-7 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention.

In particular, the Examiner writes in part:

As to claim 1, in line[] 6, it is unclear "said coil wire comprises a core wire". Is said coil wire different from a core wire?

It is unclear "a last turn of said coil wire at said free end having a smaller coil radius than would be possible by coiling said coil wire[.]"

To apply art examiner assumes that the electrically conductive layer is the circuit terminal shown in the species B of figure 9, and a last turn of the coil wire at said free end having a smallest coil radius.

The Examiner asks whether a coil wire is different from a core wire. Applicant directs the Examiner to the Specification which recites that in "Figure 2, the coil wire 5 consists of a

core wire 4 and three plated layers 5a, 5b and 5c formed over the surface of the core wire 4" (Specification, page 8, lines 1-2; Fig. 2), and that the "three plated layers 5a, 5b and 5c are formed one after another after the core wire 4 is coiled to a prescribed shape." (Specification, page 8, lines 6-8). The Specification further recites that "Figure 4 shows the case where three plated layers 5a, 5b and 5c are formed after the core wire 4 has been coiled to a prescribed conical shape" (Specification, page 10, lines 19-21; Fig. 4). As is evident from the references to the Specification noted above and the relevant figures, the coil wire is different from a core wire, with the coil wire including a core wire. It is further evident from the references to the Specification noted above and the relevant figures that the "electrically conductive layer formed over said core wire" should not be interpreted as the circuit terminal shown in FIG. 9 as suggested by the Examiner.

Claim 1 has been amended to recite "a last turn of said coil wire at said free end having a smaller coil radius than would be possible by coiling said coil wire including said core wire and electrically conductive layer." Applicant submits that Claims 1-7 are no longer indefinite for failing to particularly point out and distinctly claim the subject matter of the invention and respectfully requests withdrawal of the rejections under 35 U.S.C. § 112, second paragraph.

Rejection Under 35 U.S.C. § 102

Claims 1-7 are rejected under 35 U.S.C. § 102(e) as being anticipated by Kazama (U.S. Patent No. 6,150,616).

35 U.S.C. § 102(e) states in part that "A person shall be entitled to a patent unless . . . (e) the invention was described in (1) an application for patent . . . by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent."

Statement of Common Ownership

The present Application No. 09/909,523 and U.S. Patent No. 6,150,616 to Kazama were, at the time the invention of Application 09/909,523 was made, owned by the same person, or subject to an obligation of assignment to NHK Spring Co., Ltd. Thus, U.S. Patent No. 6,150,616 should be disqualified as prior art under 35 U.S.C. § 102(e) against the claims of the present Application.

Accordingly, Applicant respectfully requests that the rejection under 35 U.S.C. § 102(e) be withdrawn. If the Examiner continues to cite U.S. Patent No. 6,150,616 to Kazama as a reference for rejection of the present application, Applicant requests that the Examiner clarify an appropriate section of 35 U.S.C. § 102 used for rejection.

Assuming that the Examiner continues to cite U.S. Patent No. 6,150,616 to Kazama in a rejection, Applicant submits the following remarks.

In rejecting the claims, the Examiner writes in part:

As to claims 1-7, Kazama discloses in Fig. 7-11, a conductive coil contact member (14) having at least one tapered end consisting of a plurality of turns of coil wire having a progressively smaller coil radius toward a free end (clear on figs) thereof wherein: said coil wire (14b) comprises at least one highly electrically conductive layer (6a, 6), a last turn of said coil wire at said free end having a smallest coil radius Z (clear on figs 7-11).

Applicant submits that Kazama does not disclose or suggest all the limitations of the independent claims of the present application. As noted above, Applicant submits that the Examiner's interpretation of "electrically conductive layer formed over said core wire" is incorrect and therefore does not correspond to items 6a and 6 of Kazama.

In contrast, amended Claim 1 recites a "coil wire comprises a core wire and at least one electrically conductive layer formed over said core wire, a last turn of said coil wire at said free end having a smaller coil radius than would be possible by coiling said coil wire including said core wire and an electrically conductive layer." Therefore, because Kazama does not disclose or suggest all the limitations of Claim 1, Claim 1 is patentable over Kazama.

Claims 2-7 are dependent on Claim 1 and contain additional limitations that further distinguish them from Kazama. Therefore, Claims 2-7 are allowable for at least the same reasons provided above with respect to Claim 1.

For at least these reasons, Applicant respectfully requests withdrawal of rejections under 35 U.S.C. § 102.

Rejection Under 35 U.S.C. § 103

Claims 9, 11, and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kazama (U.S. Patent No. 6,043,666) in view of Kazama (U.S. Patent No. 6,150,616).

Claims 9, 11, and 12 have been canceled, thus obviating the rejections under 35 U.S.C. § 103(a).

New Claims

Claims 16-24 have been added. New Claim 16 recites a “method of making a conductive coil contact member” including “coiling a core wire into a coil in such a manner that a last turn of said free end is given with a substantially smallest possible radius for a given wire diameter of said core wire; and forming an electrically conductive layer over said core wire.” For similar reasons as those provided above with respect to Claim 1, Claim 16 is patentable over Kazama (U.S. Patent No. 6,043,666) and Kazama (U.S. Patent No. 6,150,616), alone or in combination.

Claims 17-22 are dependent on Claim 16 and contain additional limitations that further distinguish them from Kazama (U.S. Patent No. 6,043,666) and Kazama (U.S. Patent No. 6,150,616), alone or in combination. Therefore, Claims 17-22 are allowable for at least the same reasons provided above with respect to Claim 16.

New Claim 23 recites a “coil wire includes a core wire and at least one electrically conductive layer formed over said core wire after said core wire has been coiled to a prescribed shape.” For similar reasons as those provided above with respect to Claim 1, Claim 23 is patentable over Kazama (U.S. Patent No. 6,043,666) and Kazama (U.S. Patent No. 6,150,616), alone or in combination.

Claim 24 is dependent on Claim 23 and contains additional limitations that further distinguish it from Kazama (U.S. Patent No. 6,043,666) and Kazama (U.S. Patent No. 6,150,616), alone or in combination. Therefore, Claim 24 is allowable for at least the same reasons provided above with respect to Claim 23.

CONCLUSION

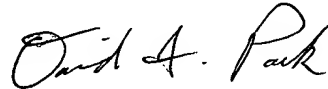
For the above reasons, Applicant believes pending Claims 1-7 and 16-24 are in condition for allowance and allowance of the Application is hereby solicited. If the Examiner has any questions or concerns, the Examiner is hereby requested to telephone Applicant's Attorney at (949) 752-7040.

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on September 29, 2003.


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Respectfully submitted,



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